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Acute Coronary Syndromes

PATHOPHYSIOLOGY OF ACUTE CORONARY SYNDROME IN HIV POSITIVE PATIENTS: INSIGHT FROM VIRTUAL HISTOLOGY ANALYSIS

Poster Contributions
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Session Title: Epidemiology of ACS Events: Of Comorbidity and Long Term Trends
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Background: Numerous reports show an increased rate of acute coronary syndrome and cardiac death among HIV+ patients (pts). However, the pathophysiologic reason of the increased rate of major cardiovascular events (MACE) in HIV+ is unknown. The histological composition and morphology of the coronary plaque is the determining factors to identify unstable lesions. Virtual Histology Intravascular Ultrasound (VH-IVUS) identifies and quantifies 4 types of atherosclerotic plaque components: necrotic, fibrous, fibro-fatty and calcific tissue. The aim of our study was to assess coronary plaque morphology using VH-IVUS in HIV+ pts in therapy with HAART and a low risk for cardiovascular events.

Methods: Thirteen HIV+ pts were enrolled in our Hospital. Patients were part of population enrolled in a previous cross-sectional study with an indication to coronary angiography per protocol based on the evidence of coronary stenosis to a dual-source cardiac-CT. Plaque components were identified as dense calcium, necrotic core, fibro-fatty tissue or fibrous tissue, with the cross-sectional area and percentage of total plaque area reported for each component. Such lesions were classified as one of the following: thin- or thick-cap fibro-atheroma (TnCFA or TkCFA), pathologic intimal thickening, fibrotic plaque or fibro-calcific plaque.

Results: All the pts presented a Framingham risk score <10%. The medium age was 53.3±4.1 years. The mean duration of highly active antiretroviral therapy was 12.9±2.4 years. Virtual Histology-IVUS analysis, performed on 23 coronary plaque, showed an 87% (20/23) of TkCFA and 13% (3/23) TnCFA; no other plaque morphology was observed. All the plaques were rich in fibrous and necrotic tissue with a low percent of calcium (table 1).

Conclusion: VH-IVUS analysis showed a high prevalence of unstable plaque morphology rich in necrotic tissue. HIV-related plaque seems to be different from those of general population: less calcific; more necrotic, with a thick-cap. This suggests a peculiar pathophysiological mechanisms for HIV-related atherosclerosis. Our data show an increased risk of acute cardiovascular events for HIV+ population, independently from traditional risk factors.